

BUNKER

Appl. No. 10/065,108

March 19, 2004

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the outstanding grounds of rejection are respectfully requested in light of the above amendments and the remarks that follow.

The Examiner has rejected claims 1, 4-6, 12-15, 23 and 24 under 35 U.S.C. 103 as unpatentable over Ritter in view of JP '901 and Glezer and, optionally, in view of Shekleton et al. (5,024,058).

The Examiner has essentially repeated the same grounds of rejection and rationale for those rejections as set forth in the Official Action of October 1, 2003, but now with the optional reliance upon Shekleton. The Examiner relies upon Shekleton for teaching "employing concavities/indentations on either or both of the inner and outer surfaces (Col. 5, lines 28-40). Hence, it would have been obvious to one of ordinary skill in the art to apply these concavities to both the inner and outer surfaces, as is well known in the art."

To the extent the Examiner's position regarding the prior art, other than Shekleton, requires response, applicant incorporates herein by reference the remarks/arguments that accompanied applicant's Amendment of December 23, 2003.

With respect to Shekleton, the Examiner has apparently misunderstood the scope of the disclosure of that reference. The exact text relied upon by the Examiner reads as follows:

Specifically, the heat transfer controlling surface means may include either a plurality of indentations 50 in a confronting surface of either or both of the hemispherically shaped liners 22 and 24 and interior wall 14 for controlling heat

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transfer by impeding heat from the combustion chamber 20 reaching the interior wall and/or it may include a plurality of trip strips 52 disposed in the oxidant flow path 42 wherein the strips 52 are secured to the interior wall of the vessel 12. In this manner, a considerable degree of control over heat transfer from the combustion chamber 20 through the generally spherically shaped liner 21 and through the interior wall 14 can be achieved.

With reference to both Figures 1 and 5 of Shekleton, it is apparent that the patentee is disclosing that the indentations 50 can appear in one or both of the liners 22 and 24. These are discrete liners appearing at the upper and lower portions of the passage as best seen in Figure 1. The indentations 50 appear between the liner 21 and the interior wall 14 or the vessel 12. There is, of course, no flow channel between the liner 22 and the interior wall 14. Moreover, the reference does not disclose or suggest indentations 50 appear on opposing faces of the liner 22 and interior wall 14 (or on the opposing faces of the liner 24 and the inner wall 14).

The applicable flow passages in Shekleton are located between the vessel 12 and the interior wall 14, and there is no disclosure or suggestion of arrays of concavities on the facing walls of these flow channels. Again, with respect to the text relating to indentations 50, these indentations do not appear in any flow channel. Rather, they are placed in the liner for the purpose of added thermal management. There is no active cooling flow here. As a result, the indentations 50 are used only to affect the thermal conduction of energy, and perhaps also thermal radiation but not convective heat transfer. Such heat indentations can also effect the structural flexibility of the liners. This arrangement is wholly unlike that of the presently claimed invention, where the

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concavities appear on facing walls of cooling channels formed in a connector segment for connecting a combustor liner and a transition piece in a gas turbine as required by both independent claims 1 and 12.

One other point bears repeating. Specifically, the Examiner has contended that JP '901 and Glezer teach the utilization of surface concavities on both inner and outer walls in order to enhance the cooling within these passages. As pointed out in applicant's response of December 23, 2003, neither JP '901 nor Glezer disclose or even remotely suggest that both the inner and outer (i.e., opposed) surfaces of the cooling channels be formed with an array of concavities as claimed. In fact, the concavities are provided on only one of the two interior surfaces of the cooling channels.

To further emphasize the requirement for cooling flow, applicant has amended both independent claims 1 and 12 to recite that the discrete cooling channels are "for receiving cooling air flow."

With these changes, and in light of the failure of the prior art as combined by the Examiner to disclose or suggest the claimed invention, it is respectfully submitted that all of the remaining claims 1, 3-6, 11-15, 23 and 24 are now in condition for immediate allowance, and early passage to issue is requested. In the event, however, any small matters remain outstanding, the Examiner is encouraged to telephone the undersigned so that the prosecution of this application can be expeditiously concluded.

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Respectfully submitted,

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